

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

| | | |
|--|---|---|
| Applicant's or agent's file reference DK-WO040214P | FOR FURTHER ACTION | See item 4 below |
| International application No. PCT/JP2005/005235 | International filing date (<i>day/month/year</i>) 23 March 2005 (23.03.2005) | Priority date (<i>day/month/year</i>) 31 March 2004 (31.03.2004) |
| International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237 | | |
| Applicant DAIKIN INDUSTRIES, LTD. | | |

1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 *bis*.1(a).
2. This REPORT consists of a total of 6 sheets, including this cover sheet.

In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.

3. This report contains indications relating to the following items:

| | |
|--|---|
| <input checked="" type="checkbox"/> Box No. I | Basis of the report |
| <input type="checkbox"/> Box No. II | Priority |
| <input type="checkbox"/> Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability |
| <input type="checkbox"/> Box No. IV | Lack of unity of invention |
| <input checked="" type="checkbox"/> Box No. V | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/> Box No. VI | Certain documents cited |
| <input type="checkbox"/> Box No. VII | Certain defects in the international application |
| <input checked="" type="checkbox"/> Box No. VIII | Certain observations on the international application |
4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).

| | |
|---|--|
| The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland | Date of issuance of this report 19 October 2006 (19.10.2006) |
| Facsimile No. +41 22 338 82 70 | Authorized officer <div style="text-align: center; font-weight: bold;">Yoshiko Kuwahara</div> e-mail: pt07@wipo.int |

PATENT COOPERATION TREATY

TRANSLATION

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

To:

Date of mailing
(day/month/year)

Applicant's or agent's file reference

DK-WO040214P

FOR FURTHER ACTION

See paragraph 2 below

International application No.

PCT/JP2005/005235

International filing date (day/month/year)

23.03.2005

Priority date (day/month/year)

31.03.2004

International Patent Classification (IPC) or both national classification and IPC

Applicant

DAIKIN INDUSTRIES, LTD.

1. This opinion contains indications relating to the following items:



Box No. I

Basis of the opinion



Box No. II

Priority



Box No. III

Non-establishment of opinion with regard to novelty, inventive step and industrial applicability



Box No. IV

Lack of unity of invention



Box No. V

Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement



Box No. VI

Certain documents cited



Box No. VII

Certain defects in the international application



Box No. VIII

Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/JP

Authorized officer

Facsimile No.

Telephone No.

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2005/005235

Box No. I

Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
☐ This opinion has been established on the basis of a translation from the original language into the following language
_____, which is the language of a translation furnished for the purposes of international search (under Rule 12.3 and 23.1(b)).
2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material
☐ a sequence listing
☐ table(s) related to the sequence listing
 - b. format of material
☐ in written format
☐ in computer readable form
 - c. time of filing/furnishing
☐ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2005/005235

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

| | | | |
|-------------------------------|--------|--------------------|-----|
| Novelty (N) | Claims | <u>1-31</u> | YES |
| | Claims | _____ | NO |
| Inventive step (IS) | Claims | <u>2-12, 14-31</u> | YES |
| | Claims | <u>1, 13</u> | NO |
| Industrial applicability (IA) | Claims | <u>1-31</u> | YES |
| | Claims | _____ | NO |

2. Citations and explanations:

Document 1: JP 6-101894 A (Hitachi, Ltd.), 12 April 1994, Full text; Figs. 2, 4
(Family: none)

Document 2: JP 2003-161465 A (Daikin Industries, Ltd.) 06 June 2003, paragraphs
0128-0146; Figs. 8, 9 & EP 1450113 A1 & WO 03/46441 A1

Claims 1, 13

Documents 1, 2

Remarks

Document 1 describes

“An air conditioning system for processing an indoor latent-heat load and sensible-heat load by means of a vapor compression cooling cycle operation, wherein said air conditioning system has a first utilization side coolant circuit with a heat exchanger 21 for latent-heat processing and a second utilization side coolant circuit with a heat exchanger 31 for sensible-heat processing;

enables the indoor supply of air passing through said heat exchanger for latent-heat processing; and

enables the indoor supply of air passing through said heat exchanger for sensible-heat processing” (refer to Fig. 4).

Document 2 describes an air conditioning system having an adsorption heat exchanger provided with an adsorbent at its surface for processing latent-heat by alternating an adsorption operation for making the adsorption heat exchanger function as a coolant vaporizer to adsorb moisture in the air in the adsorbent, and a regeneration operation for making the adsorption heat exchanger function as a coolant condenser to desorb moisture from the adsorbent (refer to Figs. 8, 9).

Connecting a plurality of coolant circuits is conventionally a well-known matter (refer to the indoor units 3a in Fig. 2 of document 1), and using the “heat exchanger for latent-heat processing” of the invention described in document 1 in place of the “adsorption heat exchanger” of the invention described in document 2 would easily be conceived by a person skilled in the art.

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2005/005235

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

[1]

Claim 2 describes, "providing a heat source side coolant circuit used as a heat source for both of said first utilization side coolant circuit and said second utilization side coolant circuit".

However, looking at the flow of coolant in each working examples described in the specification, this examination finds that while the "heat source side heat exchanger" of the "heat source side coolant circuit" is "used as the heat source" for the "air heat exchanger" of the "second utilization side coolant circuit", it is not "used as the heat source" for the "adsorption heat exchanger" of the "first utilization side coolant circuit".

It is unclear whether "used as a heat source for both" in the above description means "used sharing only the compressor" or whether it means "used sharing the heat source side heat exchanger and the compressor".

For a similar reason, the technical meaning of claim 3 is also unclear.

Consequently, the inventions of claims 2-31 are not clear.

[2]

Claim 4 describes "said plurality of adsorption heat exchangers", but there is not description of a "plurality of adsorption heat exchanges" before that.

Consequently, the inventions of claims 14 and 16-18 are not clear.

[3]

The specification describes "operating only the latent-heat load processing system", but this examination finds that in Fig. 6, coolant is flowing in the air heat exchangers 42 and 62 and the sensible-heat load processing system is also being operated. The two descriptions are contradictory.

[4]

The specification describes an "air supply mode", but this examination finds that in Figs. 12 and 14, the illustrated flow of air shows an aspect of "all ventilation mode". The two descriptions are contradictory.

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2005/005235

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of: Box V

At that time, the matter of "supplying air passing through the air heat exchanger and not allowing outdoor air to pass through the adsorption heat exchanger" would be provided as a matter of course.